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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/308, 403 10/21/99 FITCHETT

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EXAMINER

E I DUPONT DE NEMOURS & COMPANY  
LEGAL PATENTS  
WILMINGTON DE 19898

PRATS, F

ART UNIT

PAPER NUMBER

1651

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DATE MAILED:

01/31/01

Please find below and/or attached an Office communication concerning this application or proceeding.

**Commissioner of Patents and Trademarks**

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/308,403	FITCHETT, COLIN STANLEY	
Examiner	Francisco C Prats	Art Unit	1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_ .
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-29 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claims \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ .
- 18) Interview Summary (PTO-413) Paper No(s) \_\_\_\_ .
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-29 are presented for examination.

***Claim Objections***

2. Claims 4-16 and 20-29 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Claim 16 is additionally improper because a multiple dependent claim must depend from other claims ***in the alternative only***, whereas claim 16 depends from several sets of claims ***simultaneously***. Note that although MPEP § 608.01(n) provides that improper multiple dependent claims need not be considered on the merits, all claims will be treated on the merits in the interest of compact prosecution.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

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out and distinctly claim the subject matter which applicant regards as the invention.

It is noted initially that the claims do not conform to current U.S. practice, containing numerous indefinite recitations and improper multiply dependent claims.

The recitations "oxidase supplement", "peroxidase supplement" and "oxidase substrate supplement" are indefinite because it is confusing how the word "supplement" is intended to modify the ingredients. For example, the term "oxidase supplement" can be considered to recite an oxidase enzyme itself, or can be considered to recite something which supplements the oxidase.

Also, throughout the claims, the phrase "for example", as well as the parenthetical reference "(e.g. . . .)" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

In claim 3, the parenthetical "e.g." recitation is indefinite because none of the plants mentioned therein are legumes.

Claims 4-16 and 20-29 are indefinite because all of those claims are either multiply dependent claims which depend from multiply dependent claims, or are claims which depend from

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multiply dependent claims which depend from multiply dependent claims. Thus, the claims are confusing, and therefore indefinite, because it is not clear which limitations are necessarily in the claims and which are not.

Claim 6 is confusing and therefore indefinite because applicant simultaneously uses the mutually exclusive transitional phrases "consisting of" and "consisting essentially of".

Claims 8 and 11 are improper because they recite that the peroxidase supplement is optional. However, those claims ultimately depend from claims which require the peroxidase. Claims 8 and 11 do not therefore logically depend from its preceding claims.

Claims 10 and 11 are confusing because it is not clear how the composition can be oxygen free. The claims require the presence of hemicellulose, oxidase and peroxidase, each of which contain oxygen atoms.

Claim 13 is confusing and therefore indefinite because applicant simultaneously uses the mutually exclusive transitional phrases "comprises" and "consisting essentially of".

Claim 17 is indefinite because it is a process claim, yet does not recite any process steps.

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The parenthetical recitation "(or obtainable by)" in claims 21 and 23 is indefinite because it is not clear whether the parenthetical recitation is necessarily a claimed limitation or simply illustrative of what the preceding term means.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14, 16-23 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Maat et al (U.S. Pat. 5,108,765) in light of Chemical Abstracts 79(5):30641 (1973).

Maat discloses flour compositions comprising a peroxidase and glucose oxidase. See, e.g., Abstract and Claims. Flour inherently contains hemicellulose, including feruloylated arabinoxylans. See, e.g., Chemical Abstracts 79(5):30641 (1973). Note specifically that Maat discloses the use of wheat flour, as well as the use of horseradish peroxidase.

Thus, Maat clearly discloses a composition comprising the claimed hemicellulose, the claimed enzymes, and the claimed

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substrates. Note further that claims directed to gels and gelling processes are inherently anticipated by the flour in disclosed in Maat because Maat's flour contains all of the claimed ingredients and because flour can be considered a gel. A holding of anticipation is clearly required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-14, 16-23 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Maat et al (U.S. Pat. 5,108,765) in view of Chemical Abstracts 79(5):30641 (1973).

As discussed above, claims 1-14, 16-23 and 27-29 are considered to be anticipated by the Maat reference. However, because the claims recite numerous multiple dependencies, and therefore numerous combinations of limitations, it is possible that any of claims 1-14, 16-23 and 27-29 may differ from the

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Maat disclosure. Similarly, however unlikely, it is also possible that applicant will demonstrate that Maat's flour does not contain hemicellulose, thereby mooting the anticipation rejection. However, Maat still renders the claimed invention obvious in view of the fact that Maat clearly provides motivation for combining horseradish peroxidase, glucose oxidase and glucose with a hemicellulose-containing flour such as the wheat flour disclosed in Chemical Abstracts 79(5):30641 (1973). Thus, even if the claims are not anticipated by Maat, they are clearly rendered obvious by that reference.

9. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenshields et al (U.S. Pat. 5,530,112) in view of Crawford et al (U.S. Pat. 5,200,338).

Greenshields discloses the peroxidase-catalyzed oxidative gelling of feruloylated arabinoxylans from various plant and cereal sources, and the use of said gels in all of the applications recited in the claims. See, e.g., Abstract; see also col. 5, lines 17-50. Greenshields differs from the claims in that Greenshields adds the peroxidase's substrate, peroxide, directly to the gelling composition, as opposed to generating the peroxide *in situ* by adding glucose oxidase and glucose, as recited in applicant's claims.

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However, Crawford clearly discloses that a combination of glucose and glucose oxidase can be used effectively to generate *in situ* the peroxide required for peroxidase action on a polysaccharide substrate. See col. 6, lines 32-43. Thus, the artisan of ordinary skill at the time of applicant's invention clearly would have recognized that an effective method of generating the peroxide required for peroxidase action in Greenshields' process would have been the generation of the peroxide *in situ* by adding glucose and glucose oxidase to the gelling composition, as disclosed in Crawford. The artisan of ordinary skill, reasonably expecting that Crawford's *in situ* peroxide generation methods would have functioned in Greenshields' process, clearly would have been motivated to have substituted Crawford's methods for the direct addition of peroxide disclosed in Greenshields. Therefore, absent some unexpected result, the claims must be considered obvious under § 103(a).

10. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francisco C Prats whose telephone number is 703-308-3665. The examiner can normally be reached on Monday through Friday, with alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 703-308-4743. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



Francisco C Prats

Primary Examiner

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FCP

January 30, 2001